

MEDIEVAL ENCLOSURES AND A TILE KILN AT BARDFIELD ROAD, FINCHINGFIELD

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Excavations on the southern edge of Finchingfield investigated land that was marginal to the historic settlement. Enclosures of 12th–13th century date lay on the side of a trackway which was probably the original route to neighbouring Great Bardfield, and there were shallow extraction pits and a possible charcoal pit kiln in the wider landscape. Significantly, the work revealed a twin-flued updraft tile kiln of 13th–14th century date, built from peg tiles and located within a ditched roadside enclosure alongside a cess pit and a 12th–14th century post-built structure, hearth and oven. With a nearby well, these may have provided facilities for the tilers, and other pits in the vicinity could have been for extracting and puddling clay. The kiln did not appear to have been extensively repaired, save potentially for some daubing, suggesting that it may have been short-lived. There was little evidence of its products and the owner or patron is not known, but there are hints of a link with the nearby moated site of Great Winsey. The kiln, with the recorded evidence for subsistence and for activity in the landscape, contributes to the corpus of medieval tile production sites in Essex and beyond.

INTRODUCTION

Between March and May 2022, archaeological excavations covering c. 0.5ha were undertaken by Cotswold Archaeology (CA) for The Hill Group, in advance of the development of c. 4.3ha of land off Bardfield Road, Finchingfield (NGR 568306 232305; Fig.

1). The methodology, detailed results and full specialist contributions are presented in the archive report (Antrobus 2024), available online through the Archaeology Data Service, (ADS); summaries of finds and environmental remains are presented here. The archive, under code FFBR21, will be deposited with the ADS and Braintree Museum.

Location, topography and geology

The site, now the Eden Green development, lay approximately 500m to the south of the centre of Finchingfield, along the western side of Bardfield Road on a plateau of land at about 70m AOD. The ground dropped eastwards to the valley of the Finchingfield Brook and southwards to a small watercourse alongside the road leading to Little Winsey Farm (Figs 1 and 2).

The underlying geology comprised Palaeogene period sedimentary bedrock of (undifferentiated) clay, silt and sand of the Thanet Formation and Lambeth Group, overlain by Quaternary glaciofluvial deposits of Mid Pleistocene sand and gravel (BGS 2024). On site, the observed deposits were of clay, sand and gravel with occasional areas of chalk. In the southern, lower-lying part of the site, wetter deposits were recorded over clay. Prior to the excavation, the site was in arable use.

Archaeological and historical background

In 1086, Finchingfield was under ten different landowners, with two water mills and a windmill; it ranked amongst the top 20% of settlements by number of households, of which there were 124 (Open Domesday 2024). The development site lay beyond the settlement core, where historic buildings cluster around the church of St John the Baptist, The Green and Finchingfield Brook.

No historical evidence has come to light for a kiln on Bardfield Road (Antrobus 2024, Appendix E), although elsewhere in the parish (not illustrated) a 'Tilekiln' was shown on Andre and Chapman's 1777 map. Aust End Farm was also shown and there was probably a medieval kiln or 'ost' here —a 'Gilbert de Ost ende' was recorded in the 13th century (Reaney 1969, 428).

The development site lay within what was called 'Cobham's Field' in the 19th century, spanning into 'Cobham's Mead', which in turn bordered 'Potten Field' (Tithe Map, 1840, and Apportionment 1843, ERO D/CT 139a and b; Fig. 2). Finchingfield's 16th century *Tithe Book* includes copies of earlier surveys in which the field names can be traced. 'Cobhams' and 'Potten Field' were together called 'Colbaynes Purdon Field' in 1526, whilst the 1438 survey has a joint entry for 'Colbaynes Dogden' and references to 'Colbaynes medowe' and 'Purdonfeld'; that the field called 'Dogden' lay to the northwest of 'Colbaynes' is confirmed in the 1526 survey, which notes it as next to the lane leading from Finchingfield to Sampford, now Brent Hall Road (ERO D/DU 812/2, f3r, 3v, 14v, and part 2,1).

There are possible links between the field name and individuals recorded in the 14th century, broadly contemporary with the kiln. William Colbayne, a smith, appears in the 1381 poll tax for Finchingfield (Fenwick 1998, 211) and an Agnes/Agnete, widow of Walter Colbayn (deceased) is listed in the 1327 lay subsidy (Ward 1983, 62). Two early 14th century deeds were witnessed by a Walter Colbayn, one relating to Finchingfield (ERO D/DU 333/1, D/DCw T46/2). The trail, however, goes cold in relation to the kiln. Nonetheless, the 15th century tithe information reveals that by then at least, the landscape around the site comprised the larger named fields, within and around which lay smaller closes and parcels defined by boundary features such as hedges, fences, pales and 'redges' (ERO D/DU 812/2).

Manorial records can sometimes provide information about the patron of a kiln or its operation (Hare 1991, 86). However, 'Colbaynes' was not one of the parcels annotated with

the name of a manor or landowner in the earlier tithe surveys. The later tithe information lists it in a separate group with 'Cobham's Mead', 'Potten Field' and an outlying piece of land, 'Hovell's Piece' (not illustrated), possibly under the heading 'Petches Bridge' (ERO D/CT 139b), although this was not one of Finchingfield's early manors (Morant 1768, 362–370).

However, there are hints that the land may have been part of the estates of Great Winsey, a moated site which lay c. 1km to the west. The development site was bordered by lands belonging to Great and Little Winsey in the 1840s (spelt 'Winsey'), and together the parcels may once have formed a consolidated holding (Fig. 2). 'Cobhams' and 'Cobham's Mead' were amongst the estates of Robert Smith, whilst Little Winsey was owned by Hezekiah Smith, possibly a relation. The latter has buildings of late 18th century origin (Letch 2007), but that it was carved out of the Great Winsey estate can be surmised from the 15th and 16th century tithe surveys, which name the area that it occupies as 'Dyssecroft, part of Wynsey', abutting 'Purdon Field' and other parcels (ERO D/DU 812/2, f4r and part 2,1).

Great Winsey was owned by the Trustees of the Wethersfield Lectureship. In 1633 Walter Willsher, a member of the Essex puritan movement, granted the income from a 'farm called Winsey in Finchingfield and Little Sampford' to support lectures in local churches (ERO D/DQ 41/133). The lands totalled 100 acres and included 'part of Homefield and ground called Round Croft, parcels of ground called Goodall field, Churchfield, Greene, Mary Croft, Little Netherhatch, Great Netherhutch, Cobonds [?] meadow, Homefield Meadow, close called the Spryng and wood and Hoppground'. These correlate with the fields owned by Great Winsey in the 19th century (Fig. 2) and Church Field, Goodale Field and Marycroft at least were noted as belonging to Winsey in the earlier tithe surveys. 'Cobonds(?) meadow' may refer to 'Colbaynes'/'Cobhams Mead'; this would provide a direct link between the development site and the Winsey estate. In 1633, an Ezekiel Smith was tenant of [Great] Winsey, perhaps a relative of Robert and Hezekiah.

It has not been possible to trace the ownership of the development site prior to 1633, or any manorial documents for Great Winsey (see NA 2024), although Reaney's *Place Names of Essex* references 'rentals at the British Museum/Public Records Office and elsewhere' as sources of the name 'Wenelishey' in 1367 and 'Wyntsey' in 1596 (1969, 428), suggesting the existence of records. Morant's *History of Essex* describes Winsey as a 'nominal manor' of Wethersfield (1768, 372), although this arose after Willsher's bequest (Vaughan 1907, 114). It is perhaps a reasonable hypothesis that the kiln was located on the edge of a larger holding around Great Winsey and may have served it, although equally the site may have been owned by a different landowner.

THE SITE

The majority of archaeological features on the site were medieval, except for two prehistoric pits tentatively dated to the Bronze Age on the basis of a few sherds of pottery, and a post-medieval ditch and two pits (Fig. 3). The small assemblage of residual earlier finds included a palaeolithic handaxe (see CA 2023).

The trackway

A sunken trackway —previously observed as a cropmark— crossed the southeastern part of the site (3353, Fig. 3). The modern road lies along a later causeway, but the track may have been the original route of Bardfield Road, following the edge of the downward slope of the hill to skirt lower lying, wet land and to cross a tributary of Finchingfield Brook. It was 4.5m–5.5m wide and 0.6m–0.7m deep (Figs 3 and 4, Section AA), with a metalled surface of compacted gravel and stones. There were wheel ruts approximately 1.5m–1.6m/ 4ft 8½– 5ft ¼ apart, offering a broad indication of the prevailing width of carts or wagons during its use.

The trackway was probably in use by at least the 12th–13th century, as the earliest enclosures on the site align to it (see below, '12th–13th century'). However, deposits

associated with the trackway and in the flanking ditches on the north and south were of later date, probably because the route had been upgraded and maintained. The ditch was flanked by the ditches of Enclosure 4 to the north (see below), and ditch 3345 to the south. The assemblage of 24 sherds of 12th–14th century pottery from this includes a 14th-century sherd from the lower fills, whilst two pieces of late- or post-medieval CBM came from the upper fill. This suggests that drainage at least was upgraded in the 13th–14th century, probably during the lifetime of the kiln (see below, 13th–14th century). In places, ditch 3345 appeared to cut through the lowest metallised surface but elsewhere it was overlain by later deposits associated with the trackway, indicating that the track was longer lived beyond the filling of the ditch (Fig. 4). Finds from these later deposits included fragments of 15th century or later horseshoes, medieval to post-medieval pottery and ceramic building material (CBM), knife fragments and a piece of clay pipe. Based on these finds, the route appears to have gone out of use by the early 19th century and this is confirmed by the presence of a post-medieval ditch dug across it, 3343, which formed the boundary between ‘Cobham’s Field’ and ‘Cobham’s Mead’ as shown on the Tithe Map (see Figs 2 and 3).

Ditch 3335

Ditch 3335 was an enduring feature, parallel with both phases of medieval enclosures (Fig. 3); 13th–15th century pottery was recovered from it, and it may have formed the boundary between some of the parcels recorded in the 1438 tithe survey, perhaps *Colbaynes* and *Dogden*.

12th–13th century

Enclosure 1

Enclosure 1 was at least 11m by 20m in size where present in the excavation area and may have defined the rear of a roadside plot or plots (Fig. 5). The ditches were <0.2m deep, and pottery from them (17 sherds) gave an overall date of mid 12th–mid 13th century. Ditch

3333, <0.1m deep and undated, may have been the vestiges of a subdivision of the enclosure or may, just possibly, have been a beam slot or wall trench for a building (Fig. 5). A fiddle-key nail for fixing ox- or horse-shoes, of 11th–13th century date, came from pit 3180 (Fig 5).

A series of intercutting, vertical-sided rectangular and sub-circular pits between 0.7m and 1.1m deep were located within the enclosure, extending into the underlying gravelly-clay. They are dated broadly as 12th–14th century on the basis of finds. Pit-digging was a fairly common activity in the rear of medieval plots, and they may have been extraction and/or cess pits. Finds included pottery (<100 sherds), animal bone (<30 pieces), nails and a hinge/strap fitting. Cereal grains and foodstuff plants including vetch/wild pea, bean/pea, oat/brome grass and hazelnut shells were represented in environmental samples, likely deriving from food or crop processing waste (Aitken 2023, Hunter Dowse 2024). The primary fills of the pits contained a few sherds of 12th–13th century pottery, and they may have been open at this date, although the ceramic assemblage from the upper fills suggests more intense activity into the 13th–14th century. The pits appeared to respect ditch 3333, although pit 3174 cut the northernmost ditch associated with Enclosure 1, and there may have been continuous activity in these plots.

Enclosure 2

Enclosure 2, also partly within the excavation area, was at least 16m wide and was formed by a right-angled ditch 0.1–0.2m deep. The ditch terminated short of the trackway, which may suggest that it ended at an entrance. A length of curvilinear ditch, 3354, was the earliest in the sequence of ditches on the north side of the trackway, and may have formed a southern boundary to the enclosure (Fig. 5). The northern edge of the enclosure was c. 26m (85ft) from the trackway. Finds included a fiddle key nail and 11 sherds of pottery, with some pieces of 12th–13th century date.

Within the enclosure, a rectilinear arrangement of post-holes approximately 2.5m wide by 5.3m long may represent a building, although those on the western side were more ephemeral (Fig. 5, structure 1). Additionally, it is perhaps just feasible that features 3340 and 3341, the latter of which narrowed to a slot at the base, could have been beam slots or wall trenches. They were 7m long with silty, sandy clay fills. Feature 3340 was 1.0m wide and 0.36–0.66m deep, and feature 3341 was 0.8m wide and 0.4m deep. However, whilst traces of buildings in the form of combinations of postholes and linear beam-slots, wall trenches or drip gullies are evident at other contemporary Essex sites (see Medlycott 1996, 175), the ditches and postholes together here did not form a particularly recognisable structural arrangement. Features 3340 and 3341 may have represented a different phase of activity, or, given their relative widths, they were perhaps more likely to have been for agricultural or horticultural purposes.

Finds from the vicinity do however suggest that there was a focus of domestic activity, and a wider complex of buildings may have lain beyond the excavation area. The ditches and postholes between them produced 35 fragments of fired clay, 78 sherds of pottery, 30 pieces of animal bone and 3 nails including a fiddle key nail, a hook of uncertain function (see Bliss below), three pieces each of slag and CBM and a utilitarian bone reel or bobbin made of a worked sheep's femur, pierced and marked with grooves/striations (McSloy 2024). An undated key-hole(?) shaped oven or hearth base, 2931, may also have been related (Fig. 5). Pottery from features in this part of the site included a concentration of slightly earlier 11th–12th century wares alongside the 12th–13th century forms, and fewer rim forms post-dating the 13th century, confirming that activity was some of the earliest on the site (Anderson 2024a and below).

Pits

Possible extraction pits

Either side of boundary 3335, two groups of intercutting pits were aligned with the trackway and prevailing boundaries. They were slightly intercutting, flat-based and sub-rectangular, and 0.14–0.24m deep with single fills, apart from 2998 which was 0.8m deep (Fig. 5).

Spatially, the westerly group seems to lie within Enclosure 4 associated with the kiln, but the overall composition of the pottery assemblage indicates that these pits incorporated generally earlier rather than later material, with suggested dates of late 12th–early 13th century and early to mid–13th century from the 14 and 30 sherds recovered from the earliest pits on the east and west respectively, 2998 and 2990 (Anderson 2024a, Table B5, and below; Fig. 5). The other pits produced 123 sherds of overall mid-late 13th century pottery, a few pieces of fired clay and bone, CBM fragments, a few nails and two fiddle key nails. Cross-matching ceramic sherds were recovered within the easterly group. These relatively shallow pits could have been related to repeated small-scale exploitation of the natural clays and gravels, perhaps for the maintenance of buildings. Other pits of a similar date were recorded across the site (Fig. 5), and 3098 contained the remains of a young piglet.

Charcoal-making pit (Figure 6).

Features 3042/3046 could have been a pit kiln for making charcoal (Figs 5 and 6, Section BB). Pit 3046 measured 2.9m by 2.2m, by 0.7m deep. The base was covered with a dark red-black silty, charcoal-rich clay and the natural clay/gravel was reddened, indicative of *in-situ* burning. Pit 3042, 0.6m in diameter and 0.5m deep, was recorded in the base; one of the three fills was charcoal rich and burnt, (3044, Fig. 6). A cereal grain from the lowest fill, 3043, gave a radiocarbon date of 1045–1218 cal. AD at 95% probability (SUERC-107042), consistent with the ceramic date of 12th to mid-13th century from four pieces of pottery (88g). The pits may have been backfilled with dumped material. Finds included two fiddle key nails, 18 pieces of animal bone and 68 sherds of pottery of overall 13th century date.

Four environmental samples yielded cereal grains —mainly bread wheat with smaller amounts of barley and rye— along with charred arable weed seeds and chaff that may have derived from domestic crop/food processing waste (Aitken 2023, Hunter Dowse 2024). The features were cut into pit 3050, which may have been an existing depression.

Medieval and later charcoal burning often took place in clamp kilns, whereby stacks of wood were burnt on the ground surface. However, Clarke has highlighted that a shift to the predominance of mound over pit kilns appears to have occurred after the end of the 13th century in Europe, perhaps linked to the demands of the growing iron-smelting industry (2021, 18). The 12th–13th century shallow, charcoal rich U-shaped pits at Great Horkesley, near Colchester which were the subject of Clarke’s research were different to the deep, finds rich pit on the site, but possible parallels may be found in AD 11th–13th century Icelandic charcoal production pits, which had a similar graduated profile with a deeper section in the centre (Lawson *et al.* 2009, 7–8).

13th–14th century

The landscape was partly re-organised in the 13th–14th century, with new enclosures on the same alignment as earlier ones; the re-arrangement may have been directly related to the establishment of the kiln (Fig. 7).

Enclosures 3 and 4

Enclosure 3 was formed by ditch 3337, 0.3–0.4m deep, which cut across Enclosure 2 to form a parcel 16.5m (54ft) long running back from the track (Fig. 7). Ditches 3338 and 3339 within it also cut earlier features. Pottery of 12th–14th century date was recovered from ditch 3337. Enclosure 4, within which the kiln was situated, spanned 13m or c. 42½ ft back from the track and was 25m/82ft wide. The ditch was 0.06m–0.22m deep, and a section through it and an underlying pit on the western side produced pottery of late 13th–14th/15th century

date (16 sherds). The enclosure would have protected the kiln and tiles that were drying from wandering animals, as was suggested for the kilns at Danbury, also in Essex (Drury 1981, 137). Ditch 3337 extended above Enclosure 4 and may have formed an entrance/exit corridor to land to the north, possibly to control animals; an undated posthole located to the south towards the eastern end of the ditch could have been for a gatepost (Fig. 7).

Intercutting ditches 3346 and 3347 lay along the northern side of the track and were up to 2m wide and 1.2m deep. Their terminal ends may have marked an entrance into the enclosures (Fig. 7). They produced pottery of 13th–14th century date (257 fragments) and cut ditch 3342 of a similar date, from which 222 sherds of pottery and an arrowhead of probable 14th–15th century date were recovered (see Bliss, below). This part of the site was lower-lying, and it may have been muddy, washed and reworked. Overall, finds were indicative of occupation in the area, perhaps associated with the kiln site, and included CBM, shells, an iron hook, a small assemblage of animal bone, charcoal, a few pieces of fired clay, nails, rotary quern fragments and cereal grains.

The kiln

The kiln (Figs 8 and 9) is of a recognised medieval form and was dug into the slope above the track; such structures were often sunk into the sides of hills or sloping ground (Eames 1961, 143; Ryan 1999, 20). The kiln would have comprised a superstructure (no longer extant) over a firing floor at ground level, upon which tiles—in the order of thousands—would have been stacked for firing. It was heated by twin flues beneath the floor, fuelled from a stoke pit. The kiln was c. 2.7m square, within a rectangular pit 0.7m deep and 8.46m by 3.25m (15 ¾ ft by 9 ¼ ft) including the stoking/rake out area; the northern end was ramped for access, and the pit sloped down towards the kiln entrance. Operating temperatures may have been in the region of 1000°C.

A clay floor, 3146 (Figs 8 and 10), 4.4m long, was 0.3m deep beneath the kiln structure and 0.12m thick where it extended into the construction cut. At Farnham in Sussex, the location of the kiln walls appeared to have been marked on the floor (Riall 2003, 300) and at North Grange Meaux, Beverley, evidence of fire suggested that the floor was fired before the kiln was constructed (Eames 1961, 147). These details were not observed here, although the clay floor showed the effects of heating.

The central spine wall for the flues/furnace chamber, 3078, was pyramidal in profile, 2.45m long and 0.62m wide at the base, and 0.54m high. It was made from header-coursed tiles and broken pieces. Two sets of six arches, 3075, 0.65m high and 0.85m wide, were added to the spine wall. These were constructed from increasingly angled, stacked peg tiles laid longwise to the kiln, apart from the narrower rearmost arch, where tiles were laid widthways. The two or three rows of tiles above the arches is usual (Cherry 2001, 191). The gaps between the arches and at the front and rear would have allowed heat to rise, with that at the rear likely forming a flue (Cherry 2001, 191).

The peg tiles were 270–277mm x 165–175mm (10–11 by 6 ¼–½ inches), and were largely plain, with both single and double round peg holes. The size is consistent with those produced more commonly from about 1275, which became the legal standard in the 15th century; earlier tiles were generally larger with projecting nibs (Anderson, below; Drury 1981, 131; Ryan 1999, 10).

The tiles were bonded with a clay mix, as for other kilns (Ryan 1999, 20), in this case sandy with chalk and ferrous oxide flecks, similar to the fabric of the tiles but fired redder, perhaps due to the addition of sand (Tony Minter, Bulmer Brick and Tile, pers. comm). Undated pit 3147 was 0.14m deep and filled with a chalky silty clay deposit; it may have been used as a 'mortar' mixer (Fig 7 inset).

The pit around the kiln, 2952, was lined with clay with chalk inclusions, 3074, up to 0.42m thick. This formed the fire chamber walls and likely served for heat insulation, as a better refractory material than the surrounding gravel, and the chalk might have acted as a stabiliser (Fig. 8 and 10). A 'daub' mix of clay with straw and possibly lime inclusions which showed the effects of heating, 3145 (Fig. 8), was noted to have been added to the gaps between the wall and the tiles arches. Within the depth of the structure, rather than at the surface, a band of blackening was present, turning to red heat-altered material further from the fire chamber, also observed behind the tile arches (Fig. 9B). Whilst this overall pattern may have been due to heat transference into the clay wall, particularly from the arches, perhaps with different levels of heat and oxygen giving different colours, it is more likely that the reddening and blackening were due to direct contact with heat and soot (Tony Minter, pers. comm.). The 'daub' may therefore have been added as a repair. Riall highlights a reference for '2s for daubing the kiln with clay' in the accounts of 1364–5 from Highclere, Sussex, presumably to prolong its working life although it is not clear whether this meant the oven structure itself (2003, 328). It is also possible that the kiln pit was baked prior to construction, perhaps to manage shrinking and cracking, although such a step may not have been necessary to achieve efficient firing and it may have been easier to bed tiles into softer material (Tony Minter pers. comm.). The daub does not show the reddening and blacking of the material beneath; if the kiln was used after it was applied, perhaps it may have fired differently, with the chalk/lime inclusions, or heat may have been generally directed upwards in an efficient firing (Tony Minter pers. comm.).

The area of the firing floor measured c. 2.35m by 2m wide. Tiles would have been stacked on edge for firing and may have been placed across the gaps between the arches (Edmondson and Thorn 1989, 80; Cherry 2001, 191). As is common for kiln sites, no other superstructure survived; there would have been a temporary covering with a vent or openings to allow gases to escape, probably of brick, tile or turf —although at Radwinter,

Essex, a kiln was filled with debris from a clay dome (Cherry 2001, 191; Drury 1979, 25; Pearson 2018, Ryan 1999, 20).

The sloping front of the kiln, 2969 (Fig. 10, Section CC), comprised a solid clay material which framed the double flue entrances, measuring 0.65m thick at the base; this appeared to have been fired or baked, either during use of the kiln or potentially prior to use. Such front structures may have provided additional insulation where the kiln was open to the air, and/or reinforcement to counteract expansion and lift where heat would have been most intense (Dale and Caiger 1974, 31; Drury *et al.* 1975, 144; Regan *et al.* forthcoming). Some kilns show repair to and extension of the flue entrances, although there does not appear to have been evidence for this here.

It is likely that stoke pits were roofed, to keep the stoker and fuel dry (Dale and Caiger 1974, 31); two cut features within the pit of a kiln of 15th–16th century date at Puckeridge, Hertfordshire, and stub walls at a 15th century kiln at Shenley Wood, Buckinghamshire, were interpreted as supports for a roof (Regan *et al.* forthcoming; Edmondson and Thorn 1989, 80). Four posts outside the corners of the kiln at Radwinter were also suggested to be from a roof, perhaps to shelter a hot kiln from rain (Drury 1979, 25; 1981, 136). Superficially, medieval pits around the north side of the kiln at Finchingfield could suggest a structure at the front of the kiln, although their overall arrangement and dimensions —0.18, 0.8 and 0.07m deep and of varied size— cannot be easily reconciled into a structure.

The deposits in the stoke pit relate to the use, disuse and backfill of the kiln. The pit may have been periodically raked out, but the primary fill, 2962, was up to 0.3m deep and charcoal rich (Fig. 9A). Finds included a nail, piece of quern, eight small pieces of pottery (see Anderson, below), three pieces of CBM and a piece of copper alloy strap end (Ra. 01, see Bliss below), overall suggestive of a mid 13th–14th century date. A cereal grain from this

deposit gave a radiocarbon date of 1163–1261 cal. AD at 95% probability (SUERC–107040), although it may have been residual.

The environmental sample contained free threshing wheat and large legume seed fragments (broad bean or pea); possibly waste from crop drying was added to the fuel (Hunter Dowse 2024). Charred damson/bullace, sloe, hawthorn and blackthorn stones, hazelnut shell fragments, and traces of rose achene, apple and pear —mainly from fill 2984 of the stoke pit, ditch 3346 and well 2994 (see below and Fig. 7)— may represent snacks or fuel resources that were gathered from hedgerows. Overall, samples from the kiln, from a few of the ditches (3346, 3347) the well and cess pit 3061 (Figs 7 and 12) included large quantities of charcoal fragments, with several samples including non-oak wood, roundwood and twig fragments (Aitken 2023). Elsewhere, archaeological and documentary evidence point to various fuel sources for kilns, including oak and hornbeam, underwood, faggots, furze/broom loppings, brushwood, turf and peat, along with resources from managed woodland and scrub, often transported to kilns in cartloads (Drury *et al.* 1975, 133; Le Patourel 1968; Regan *et al.* forthcoming, Ryan 1999). Snails recovered from the primary fill of the stoke pit were indicative of well-established open environments with areas of longer grass and shade or scrub with seasonally flooded areas, reflecting either the environment around the kiln or fuel sources (Aitken 2023).

Over the primary fill of the stoke pit there was a tipped deposit of silty clay with charcoal lenses, chalk inclusions and fired clay up to 0.54m deep, overlain by further possible dumped deposits of mixed silty clays (2963–7) (not illustrated); a ceramic peg, door strap hinge, nail and late 14th–16th century pottery (33 sherds) were recovered from the uppermost fill. The kiln itself was filled with rubble and debris of clay, mortar and tile pieces packed tight throughout the chamber; some fragments of late- or post-medieval hip and ridge tile (15th–16th century) may have related to the kiln or come from later material used as consolidation.

Structures

Six undated postholes (structure 2) formed a rectangle of 1.6m by 2.5m aligned to Enclosure 4 (Figs 7 and 11), indicative of a small structure, although a superstructure may have been larger. The corner postholes were slightly deeper and were possibly more weight-bearing. Postholes 3242 and 3315 may have been associated; they produced a few pieces of fired clay, CBM and medieval pottery. Workshops and buildings associated with kilns for the production or drying of tiles, 'tile houses', have been documented (e.g. Drury 1981, 136; Riall 2003, 327–8), whilst at Danbury, Boston (Lincs.) and Lyveden (Northants.), features have been interpreted as supports for tables or blocks where tiles were shaped (Drury 1979, 135; 1981, 136; Pearson 2018, 7). Tiles were made by throwing clay into sand-dusted moulds or forms on a sanded board or table and levelling it off with a knife or wire; they were left to dry for several months before firing (Cherry 2001, 190).

Elsewhere, buildings on ground sills were documented (Riall 2003, 328), and these may have left no traces. Perhaps there were larger structures within Enclosure 4 that have left only fragmentary and piecemeal traces; an undated linear feature 3.5m long, up to 0.62m wide and 0.16m deep, 1120, may have been a beam-slot or trench for a wall of upright timbers (Fig. 7).

Outside of the enclosure, four undated postholes <0.1m deep in a rectilinear arrangement of 3m by 6m possibly formed a small building, structure 4 (Fig. 7). A trio of postholes 0.1m to 0.2m deep, structure 5, formed a triangle 1.5 by 1 by 1.6; they may perhaps have been for hitching posts or other roadside installations, or even, perhaps, an A-frame for lifting items (Fig. 7).

Pits

A large, irregular pit 1.28m deep, 3061 (Figs 7 and 12, Section DD), may have been a cess pit. The assemblage of 187 sherds of pottery from it was broadly of late 13th–14th century date, with a few sherds of later fabric or rim form. The lowest fill was a dark silty clay, 3062, from which finds included a fragment of quern, CBM, a few pieces of bone, a lead alloy textile mount (Ra. 4, see Bliss below) and a nail. Environmental remains included charcoal and cereal grains, one of which gave a radiocarbon date of 1305–1411 cal. AD at 95% probability (SUERC–107043).

Pits 3222 and 3033 also dated to the late 13th–14th century (Fig. 7), whilst Pit 3005 appeared slightly later (14th–15th century, Fig. 3). The intercutting of ditches and pits suggests a continuum of activity.

Ovens

Two ovens or hearths may have been contemporary to activity at the kiln, associated with subsistence or industry (Figs 7 and 13). Ovens for drying of sand were used at later tileries (Dale and Caiger 1974, 29). Feature 2954 was lined with chalky clay 0.12m deep. Four pieces of 12th–mid 13th century pottery were recovered from the first fill, with 36 sherds of pottery of mid-late 13th century date from overlying silts. Feature 2958 was 0.12m deep and lined with heat-altered stone, gravel, flint and clay, with a compact fill.

Northwards of the enclosure was the base of oven 2984 (Figs 7 and 13), dated as 13th–14th century from 19 fragments of pottery. An environmental sample from this produced an assemblage of cereal grains and weed seeds (Aitken 2023, Hunter Dowse 2024). The northeastern end was stonier and may have been an oven chamber heated from a fire in the flue; at the southwest, there were traces of a fired clay structure. A series of undated

postholes 0.1–0.2m deep, structure 3, may perhaps have served as a curvilinear wind break 9.3m long.

Well

Feature 2994, cut into chalk, was 1.34m deep, with a broad period of use from the late 13th to 14th centuries (Fig. 7), possibly publicly accessible from the road. The lowest fill was a dark, wet sandy silt-clay 0.18m deep, from which was recovered a copper alloy buckle (Ra. 18, see Bliss below) dated 1250–1400, with pottery broadly dated from the 13th–15th centuries (31 sherds). Environmental remains included a relatively large quantity of free threshing wheat and other cereal grains, chaff, weed seeds, charcoal and a few fragments of pea and broad bean, perhaps waste from a crop or food drying kiln (Hunter Dowse 2024); one grain gave a radiocarbon date of 1283–1394 cal. AD at 95% probability (SUERC–107041). Finds from other fills included sherds of a Mill Green ware jug.

Puddling/Extraction

Clay for tile making was often dug from close to a medieval kiln site, perhaps from crofts, strips or common or open fields; extraction pits could be leased from manorial lords and digging from waste or common land was usually subject to licence from manorial lords (Cherry 2001, 189; Le Patourel 1968, 114, Regan *et al.* forthcoming Ryan 1999, 36). A quarry pit to the north of the site (3319), hollows (3091 and 3350, 0.5m–1m deep) and waterlogged pits in the wetter land towards Finchingfield Brook, 0.16–0.4m deep, may have all been for the extraction and perhaps puddling of clay and were dug into orange and blue clays (Fig. 7). They were of broad 12th–14th century date, with 3091, which also included a few pieces of roof tile, more closely dated as 13th–14th century. Tile making was seasonal, as set out in an ordinance of 1477 which stated that clay should be dug at the beginning of November, turned before the beginning of February and made into tiles after March. Tiles were then left to dry until they were fired in the summer (Cherry 2001, 190–91). The action of

winter frost helped to break clay up; as was suggested for Danbury (Drury *et al.* 1975), clay may have been stored within the enclosure.

Clay may have required little preparation, as suggested at Danbury (Drury 1981, 136), or may have been watered and trodden to remove stones, with puddling pits for storing and soaking clay perhaps fed by leats and channels (Regan *et al.* forthcoming; Pearson 2018, 7). The wetter pits south of the track, with 13th–14th century pottery in their upper fills, may have been used in such processes, although they were of varied shape. The pits may also have been for another purpose that needed water such as retting flax, although such an interpretation is not indicated by the environmental remains; pit 3351 (Fig. 7) produced cabbage(?) seeds in low numbers, charred wheat grains and fragments of oyster shell (Aitken 2023). The undated postholes of structure 6 were <0.1m deep and broadly formed a rectangle of 2.3m by 6.5m. They may perhaps have been for structures or a platform that was used for working in this area.

SELECTED FINDS

Post-Roman pottery

by Sue Anderson

The pottery assemblage comprises over 20kg of pottery. Full details can be found in Anderson 2024a.

The assemblage

Table 1 quantifies the pottery by fabric group, and indicates a date for the fabrics. Form terminology follows MPRG (1998), and rim forms and fabrics follow the Essex type series (e.g. Drury 1993a; Cunningham 1985; Cotter 2000).

There is some overlap in the use of shelly and sandy wares, but the relative lack of Fabric 12 may suggest little activity prior to the mid/late 12th century. The majority of sherds are in Fabric 13, and included the rims of nine jars, three bowls and a dish, with parallels for some jars in the Rivenhall and Colchester assemblages (e.g. Drury 1993a, no. 51; Cotter 2000, fig. 30.59 and fig. 33.9).

The large group of medieval coarsewares (Fabric 20) were in a range of typical local sandy fabrics, including some usual for south-west Suffolk and north-west Essex and others similar to the products of the Mile End and Great Horkesley kilns to the north-west of Colchester (Drury and Petchey 1975). There was a small group of Hedingham coarseware. Jars were most common, with a small group of jugs and a few bowls. Most rims can be dated to the later 12th or 13th centuries, although later types are also present.

The glazed wares were dominated by Hedingham wares, some of which appeared to be late medieval. The Fabric 21 group also included some late medieval wares, with some Suffolk types. The few rims include six jugs and a bowl. A quantity of Mill Green sherds were mainly from one jug. There were two unprovenanced ?English wares and an abraded body sherd of Rouen whiteware from France, an unusual find from an inland rural site.

Catalogue of illustrated vessels (Fig. 14)

1. Fabric 20 jar, tapered everted B2 rim. Ditch 3346 fill 3268 (Period 2.2, 13th–14th century).
2. Fabric 20 jar, flat-topped everted (H2) rim. Decorated with fingertip impressions below the neck. Ditch 3342, fill 3056 (Period 2.2, 13th–14th century).
3. Fabric 20 jar, flat-topped everted (H2) rim. Ditch 3342, fill 3010 (Period 2.2, 13th–14th century).
4. Fabric 20 jug, strap handle. Decorated with two lines of diagonal stabmarks. Ditch 3342, fill 3056 (Period 2.2, 13th–14th century).
5. Fabric 21 jug, beaded (C1) rim and strap handle. Traces of white slip externally, possibly horizontal lines. Deep groove in handle. Pit 3174 within Enclosure 1, fill 3176 (Period 2.0, 13th–14th century).

6. Fabric 35 jug, upright (A2) rim, strap handle, base with collar. Clear/green glaze. Possibly late medieval Hedingham-type. Pit 2994, fills 2995, 2996 (Period 2.2, 13th–14th century).

Tile kiln 2953

Two fills of the tile kiln stoke pit, 2952 (Fig. 8), produced 41 sherds. Those from the lowest, 2962, were small (eight sherds, 15g) and most were abraded, but they included fabrics 13, 20, 21, 22 and 98M. Sherds from the upper fill 2967 were mostly fabrics 20, 20D and 21, with two sherds of 13T. Two sherds of Fabric 21 were Suffolk-type late medieval and transitional ware, suggesting a mid–late 14th-century date at the earliest for this fill.

Discussion

Most of the assemblage reflects continuous occupation from the early to high medieval periods, with some late medieval material although little to suggest continuation of activity much beyond the later 14th or early 15th century. Pottery of high medieval date was more common than early medieval (based on MNV), but both types were found in many contexts and there is likely to have been some contemporaneity of use of the types spanning the ?mid 12th and 13th centuries.

The variety of fabrics encompassed by the Essex groups 13 and 20 is broad, and while many vessels are in the fine micaceous clay comparable with that used for Hedingham ware (with varied sand additions), other fabrics appear to have come from further afield in Essex, Suffolk, and likely also Cambridgeshire. The early medieval group consists almost exclusively of sandy wares and only a minimal quantity of shelly wares is present, as seen at more southerly sites around Stansted, Little Dunmow and Elsenham (Walker 2004; Mephram 2007; Anderson 2023). The high medieval group comprises a variety of coarsewares grouped under 'Fabric 20', probably made at a number of small and undiscovered potteries within c.30 miles of the site. The nearest known kilns were at Great Bardfield and Westerfield (Walker 2012, 21), but these produced Hedingham coarsewares which are

generally finer than most of the pottery in this assemblage. There were one or two sherds of coarseware types which are found in abundance in south Suffolk (SSCWM, MSSCW and MSSBW; Anderson 2020). Glazed wares were mostly from local or regional production sites, the majority from nearby Hedingham, but also Mill Green (Ingatestone) and unknown sources. Jars were more common than bowls, a pattern which tends to be more typical in urban assemblages than rural ones of the period, although sites vary.

A large proportion of the assemblage (28%) was recovered from the area south of 12th–13th century structure 1 (Fig. 5) and may perhaps represent midden material incorporated into ditches during backfilling. This is a relatively large quantity of pottery to have come from a single structure, perhaps suggesting that the putative midden was used by several households. The overall make-up of the (main) fabrics is broadly similar to that of the rest of the site, but the main rim types show a slight difference, with fewer of the latest type than in the rest of the assemblage, suggesting that less rubbish was being deposited in this area by the end of the 13th century.

Overall, the range of wares comprises typical Essex-type cooking vessels with some table wares, including glazed wares of mainly local origin. Most vessels were sooted, some heavily, and a few showed signs of wear, but probably through normal domestic use. A single sherd of Rouen ware in a pit in Enclosure 1 (3174, Fig. 5) may perhaps suggest that someone living nearby was a merchant or had connection to foreign trade during the first half of the medieval phase, but otherwise there was no particular evidence for status.

Ceramic building material and fired clay

by Sue Anderson

Fragmentary and complete tiles and bricks were recovered (212 pieces/19kg, Anderson 2024b). Tables 2 and 3 show quantification of the assemblage by fabric and form, with an indication of date. Fabrics were identified on the basis of macroscopic appearance and main inclusions; these were only differentiated where the quantity was greater than one or two pieces. Roof tile thicknesses were measured when another dimension was available. Form terminology follows Drury (1993b).

Forms and fabrics

Roof tiles

Fragments (190 no.) of roof tiles were recovered from fills of ditches, pits and the trackway, and as samples from the structure of the kiln. A range of fabric groups was recorded, although with broadly similar inclusions. The main fabrics were fine or medium sandy with flint and ferrous inclusions (fsffe/msffe), with a chalk-tempered variant also relatively frequent (mscfe). Other fabrics were similar with other natural inclusions such as clay pellets or chalk. A small proportion was white-firing, but this may have been due to partial vitrification associated with use in the kiln.

Plain roof tiles were identified as medieval (RTM) based on firing and fabric, and comparison with samples from the kiln structure (pinkish or pale buff mscfe and cream-coloured wmsc fabrics). Only a few had reduced cores and none were glazed, both being common features of medieval roof tiles elsewhere in the region; the tiles from the kiln at Danbury, although oxidised externally, had a reduced core (Drury *et al.* 1975, 111). Six tiles in this group had peg holes, all circular; three had two holes and one had one. Two complete examples were recovered from the kiln structure 2953, one in a white fabric (wmsc; 277 x 165 x 13mm), and the other in a buff chalk and ferrous oxide fabric (mscfe; 270 x 175 x 13mm). Other examples, complete in two dimensions, were 165–170mm wide and 13–14mm thick.

A group in orange-red fsmcp and fsmccp fabrics was also recovered from the kiln, including five fragments of two hip tiles and four fragments of ridge tiles. Tiles in this type of fully oxidised fabric would typically be considered to be late- or post-medieval. These were recovered under the general kiln number 2953 and are not visible in the site photographs, although were noted in the backfill by the excavator. This small group has examples with double and single peg holes, and are of similar width to other tiles from the kiln (167–170mm), but are slightly thicker (14–15mm). An overfired and partially vitrified fragment of msffe fabric, 15mm thick, also came from the kiln structure, and four small fragments in the same fabric were recovered from stoke pit fill 2962. Ridge and hip tiles were also thicker (17–21mm). One hip tile apex had a square peg hole. It is possible that the fine sandy red-firing tiles were products of the kiln, but unfortunately there are no overfired examples or wasters in this fabric from anywhere on the site.

A few overfired fragments of msffe fabric from 13th–14th century ditch 3342—which included kiln type and probably later material—and medieval ditch 3355 (Fig. 7) may relate to the kiln. They may be of medieval rather than post-medieval date (recorded as ‘RT’) and may represent firing waste.

There was fired clay ‘mortar’ adhering to some kiln tiles (see below), but the presence of lime mortar was noted on only a few roof tile fragments. One was a fragment of ridge tile recovered from the kiln structure, perhaps indicating that it had been incorporated into another structure previously. Two other fragments had patchy mortar, an mscq medieval roof tile from 13th–14th century ditch 3342, and a small piece of later ?intrusive tile from pit 3222 (Fig. 7).

Fired clay

Fragments of fired clay (420 pieces, 2.4kg) were quantified by fabric and, where possible, type. Fabrics were identified based on macroscopic appearance and main inclusions.

There were 122 fragments (881g) of fired clay 'mortar' from the kiln —some adhering to tile samples— and 129 other fragments (764g) from the rake-out/stoke pit and the cut for the kiln. There were 105 pieces which were flattish on both surfaces and measured between 6–12mm thick; thicker fragments represented corners and intersections between tiles and a few pieces showed where the clay had been pressed against the tile peg holes. The 'mortar' was in a medium sandy fabric with chalk and ferrous oxide, similar to the fabric of the medieval roof tiles, but typically red rather than buff.

Other fired clay recovered from the kiln comprised soft, friable pieces in a silty fabric with chalk and grass/straw impressions from the kiln cut (fill 2969) and some harder, fine sandy pieces with the same inclusions, recovered from the stoke/rake-out pit (fill 2962). These were fragments of 'daub' which filled gaps between the wall and tile arches.

Most of the remainder of the assemblage comprises smaller and abraded undiagnostic fragments, some with flattish or convex smoothed surfaces and occasional straw/grass impressions. Fragments were recovered from the fills of pits, ditches and post-holes, with the greatest concentrations in well 2994 and ditch 3346 (Fig. 7), from which 32 and 45 fragments respectively were recovered. This group is typical of domestic or craft-related waste discarded into open features in the medieval period, and is likely to represent debris from hearths, oven domes and other fire-related features.

Discussion

Of most importance is the sample recovered from the kiln. Based on the site photos, much of this appears to have been constructed of pale buff and cream-coloured tiles (fabrics wmsc and mscfe), although some reddish tiles are visible in the core of the structure. However, the kiln context 2953 also included several fragments of hip and ridge tile in darker red and finer fabrics (fsmcp, fsmccp) which appear more typical of post-medieval fabrics but which could be very late medieval (perhaps 15th century). The peg tile sizes used in the construction are comparable with those made at the late 13th to 14th-century tile kiln at Danbury (Drury *et al.* 1975, 111), and ridge and hip tiles were also made there. Similar-sized roof tiles were made in the 15th century at Little Brickhill (Mynard 1975). Both sites are dated based on the decorated floor tiles which were also made there. At Tylers Green, the earliest kiln was built of tiles measuring 275 x 175 x 15mm, while the later phases used slightly longer and thicker tiles; this kiln was archaeomagnetically dated to the 15th century (Zeepvat 2009). Although the kilns at those sites were built using peg tiles and are closely similar to the Finchingfield example, there is no evidence for the firing of glazed tiles of any sort in this kiln.

Based on the sample from the kiln, there is no particular evidence to suggest that the tiles from which it was constructed had been used elsewhere prior to their incorporation into the kiln (for example they show no clear signs of weathering, sooting or lime mortar traces).

Other than a few small pieces of overfired roof tile in the msffe fabric, no wasters were identified on the site, suggesting that these may have been transported elsewhere for use as hardcore. However, those few overfired pieces probably indicate that this was the fabric of the tiles produced in the kiln.

Metalwork

by Alex Bliss

Seventy-eight metal objects were recovered, mainly iron and diagnostically or contextually of medieval date (Bliss 2024). Functional categories below are based on those devised by Crummy (1983).

Fixtures and fittings

Forty iron carpentry nails represent most of the types illustrated by Goodall (2011, 164, Fig. 9.1), most with clenched shanks suggestive of use. Five of type 3, solidly made with flattened, overhanging rectangular heads, are probably structural.

Two sub-rectangular iron fragments of medieval/post-medieval date probably related to hinges or strip fittings. One came from the upper fill of the kiln stoke pit, 2967 (see Goodall 2011, 201, 203, 205, 207 for parallels), the other from a pit within Enclosure 1.

Two incomplete iron hooks from ditch 3342 (see Goodall 2011, 326–327, J163–J167) and posthole 3086 of structure 1 (*ibid*, 329, J175) are non-specific (Figs 5 and 7); potential functions include for hanging foodstuffs or carcasses, suspending cooking vessels or securing tiles to roofs (Goodall 2011, 301, Ottaway and Rogers 2002, 2836).

Dress accessories

Four dress accessories were all of mass-produced types. A copper alloy sheet-metal composite strap end (cat. no. 1, Fig 15.1) and alloy buckle frame (cat. no. 2, Fig 15.2) came from the kiln stoke pit and well 2994 (Fig. 7). A 13th–14th century lead alloy eyelet, probably for reinforcing the edge of textile garments, came from the lowest fill of cess pit 3061 (Egan and Pritchard 1991, 206, no 1111), and a torn fragment of copper alloy sheet with two

perforations that may originate from a strap end or buckle plate came from the basal fill of well 2994.

1. Strap end, copper alloy. Composite with two sheet plates riveted at top and bottom enclosing internal spacer. Rectangular, tapers along length to rounded terminal knop. Remains of tinning on outer surface of plates. Length: 29.9mm. Width: 15.38mm. Thickness at midpoint: 2.96mm. Date: c. late 13th to 14th century. Cf Egan and Pritchard 1991, 147, nos. 696, 698-699. Kiln stoke pit rake-out deposit 2962. Ra. 1.
2. Buckle frame, copper alloy. Plate and pin missing, trapezoidal in plan with slightly expanded sides. Strap bar recessed, small projections on side of frame, thickened front edge with raised moulding on upper face forming pin rest. Length: 17.27mm. Width: 20.65mm. Thickness: 3.3mm. Date: c. 13th to 14th century/1250-1400. Meols type C (Egan 2007), Cassels (2013) type 1.7C. Basal fill 2995 of possible well 2994. Ra. 18.

Tools and personal items

A whittle tang knife with a separate copper alloy collar (cat. no. 3, Fig 15.3) represents a utilitarian object, used in various everyday settings. Collars often indicate a later medieval to post-medieval date, but there is a parallel from Fishergate, York, from a late 13th/early 14th century context (Ottaway and Rogers 2002, 2751 and 2759, Fig. 8169, no. 8169). Two fragments with triangular or pointed oval cross-sections—from the trackway and pit 3174 within Enclosure 1 (Fig. 5)—may also originate from knife blades.

3. Knife, composite. Tang and uppermost part of blade preserved. Tang rectangular in cross-section, retains mineralised remnants of handle. Cylindrical sheet collar of copper alloy wrapped around junction between tang and blade, decorated with central groove. Length: 83.61mm. Thickness at midpoint of tang: 6.19mm. Max. width of blade remnant: 16.83mm. Date: probably medieval, late 13th to 14th century. Later medieval trackway deposit 3028. Ra. 32.

Weaponry

A medieval armour-piercing arrowhead (cat. no. 4) was recovered from ditch 3342, corresponding with Jessop 'warhead' type M4 (Jessop 1996, 194, 197–8)/London Museum Medieval Catalogue type 16 (Ward-Perkins 1940, 66, 70). It is virtually identical to one in the collections of the Royal Armouries (acc. no. XI.516), with excavated examples suggesting a 14th–15th century date (Thompson 1972, 120–121; Goodall 1982, 105–106; Goodall 1990, 1070).

4. Arrowhead, iron. Virtually intact, heavily encrusted, largely survives in trace form encased within corrosion shell. X-ray shows cylindrical, tapering socket and narrow triangular head

with thin barbs (one missing). Length: 60.80mm. Max width: 21.16mm. Diameter of socket at base: 11.12mm. Date: later medieval, *circa* 1300–1500. Fill 2976 of ditch 3342. Ra. 23.

Equestrian objects

Twenty-one objects are associated with the shoeing of draught animals such as horses or oxen. Seven horseshoe fragments came from the trackway. Two are of Clark type 2, of later 11th–13th century date, and four appear to be of type 4 with rectangular nail holes, a form which emerges in the 14th century, becomes widespread in the 15th and continues into the early 16th (Clark 2004, 86, 88, 95–7, 115–6, 120–123, figs. 80–81, 86–89; Goodall 1979, 123, figs. 64–5, nos. 109–112, Goodall 1984, 338, fig. 189, nos. 41, 43). One large fragment probably represents a post-medieval keyhole form (AD 1600–1800, see Sparkes 1976, 20–21), and a further heel fragment is late- to post-medieval.

Thirteen ‘fiddle-key’ nails mostly came from 12th–13th century phase features. These were generally utilised in conjunction with shoes of type 2, of 11th–13th century date (Clark 2004, 86, 95–6) though some are known from 14th century contexts (Goodall 2011, 364). All had shanks of rectangular cross section and widened heads of hemispherical or rectangular form, the largest approximately 31mm in length.

Summary

Dress accessories of an ordinary nature suggest low status use and occupation of the site, with tools such as iron knives equally employable in the tile-making process as for personal tasks or eating. The nails and accompanying fragments of strap hinge may have been associated with timber-built structures, while the two iron hooks may indicate the presence of foodstuffs and/or cooking. The equestrian-related artefacts indicate fairly substantial draught animal activity in the area, undoubtedly related to the trackway. Armour-piercing arrowheads of military attribution are more difficult to interpret as these are more usually associated with

higher-status manor and castle sites, though the possibility of nearby archery practice butts may be worth considering, as is casual loss.

The virtual absence of later finds from the trackway suggests the road may have shifted from its original course by c. 1800 if not before.

DISCUSSION

Landscape

Overall, the site gives an insight into part of the landscape on this side of Finchingfield which, along with the documentary evidence, provides some context for the kiln.

As noted above, the 15th century tithe documents show a pattern of large fields divided into smaller holdings. The project offers insight into the organisation of a sample of the landscape two centuries earlier than the tithe survey, and more generally, parts of East Anglia saw early enclosure of otherwise more open land (Hunter 2003, 9). Elsewhere in Finchingfield, late 12th and early 13th century *Feet of Fines* records for property transactions in which mention pastures, meadows and crofts (Kirk 1910).

The 12th and 13th centuries were a time of population pressure, and the earliest enclosures at the site and activity within them may have been related to the growth of Finchingfield. The evidence for activity does not appear to indicate households of any particular status, and the pottery assemblage comprises mainly local coarsewares, domestic in nature and fairly well worn and sooted by the time of deposition. The bone reel or bobbin was cruder than many published well-made examples of decorated bone and ivory, and may well represent an item of lesser status utilised for everyday work (McSloy 2024). Overall for the site, the small assemblage of medieval animal bone (250 fragments) —mainly comprising primary and

secondary butchery waste — showed evidence of frequent gnawing, indicating that waste had been strewn. The small but varied collection from within Enclosure 2 included cow, sheep/goat, horse, dog and pig, particularly from ditch 3340 (Clarke 2024).

The early enclosures were not contiguous, but the overall scheme shows an element of order and, possibly, planning. Elsewhere in Essex and East Anglia, it has been shown that from after the Norman Conquest, into the late 13th century, waste land was ploughed and areas of rough pasture and woodland were colonised (Hunter 2003, 9). Perhaps this was the case here. Pig bones —albeit very few but including a piglet burial— may hint at husbandry (Clarke 2024), and the number of ‘fiddle key’ nails used in shoeing horses or oxen shows the presence of draft animals (Bliss 2024). Further, whilst arable land-use cannot be ruled out, the presence of a possible charcoal pit kiln may suggest some scrub, brush heath or woodland between the enclosures (see Ryan 1999, 36). The series of shallow extraction pits may indicate low level extraction of clay and gravel or perhaps turf digging. Their neat arrangement suggests excavation within a boundary, and it has been highlighted elsewhere that where there was a rotation of land-uses, the filling in of pits may have facilitated grazing (Le Patourel 1968, 115). Such a cycle may explain a succession of intercutting pits, perhaps seasonally dug. A marginal area of scrubbier —perhaps common— land would not be unusual for the establishment of a medieval kiln, particularly if it offered good resources for the tile making process (Drury 1981, 135; Ryan 1999, 5, 8, 30).

Tile-production site

The Essex tile industry

The kiln was previously unknown from archaeological or historical information, but it fits into a wider corpus of twin flued updraft kilns constructed from the 13th century onwards in the south and east of England (Drury 1981, 131). The increased prevalence of kilns was linked

with fashion and building traditions that moved towards the more widespread use of tile in the 14th and 15th centuries (Cherry 2001, 194). The greater part of Essex is underlain by London clay, and the geology of the county offered the essential materials of clay, brickearth, loam and sand which led to the establishment of medieval ceramic and clay working industries in areas across the county. These were located particularly on common or marginal land and heaths or areas of managed woodland, near streams or rivers, on sites that offered mixed gravel and clay subsoils, water and fuel sources including furze and broom. Other requirements were a well-drained working area, access to markets through road or water transport and the need for smoke and fire risk to minimally impact nearby settlement (Cherry 2001 189; Drury 1981, 135; Pearson 2018; Ryan 1999, 3–8, 38–40).

Date, form and function

The kiln is broadly dated as 13th–14th century on the basis of artefacts from the lower fills of the stoke pit, the general dates of activity on the site, and a general broad date for the tiles used in its construction which —as peg tiles with holes presumably for use in roofing— may have been obtained in bulk from another kiln. The kiln was cut into one of the intercutting ditches at the south of the site, 3347, and may have been constructed later within the 13th–14th century phase of activity. Tiles from the kiln and its backfill possibly span into the 15th century, and a later medieval date for backfilling appears consistent with pottery from the upper fill of the stoke pit.

The kiln, with a firing floor of 2.3m by 2m, is of comparable size to other excavated examples from Essex. At Danbury, approximately 30km from the site, two late 13th–14th century roof and floor tile kilns measured 2.0m by 2.2m internally and 2.4m long respectively (Drury *et al.* 1975). At nearby Radwinter, approximately 10km from the site, a 14th–15th century kiln measured 1.85m by 2.4m internally (Drury 1979) and a kiln at Stebbing, Essex, also approximately 10km away, was 2.13m wide (Ryan 1999, 30). The narrower rear arch at

Finchingfield does not seem to have been a feature at Danbury or Radwinter; this may have been a deliberate part of the design, perhaps to control hot gases, or there may have been an element of miscalculation.

Whilst the kiln at Danbury made floor tiles, there was no evidence at Finchingfield for the production of decorative or glazed wares. Aside from some overfired fragments from ditch 3342 in a mid sandy fabric with ferrous oxide, which may just be the only traces of the kiln product, there was a marked absence of waste products. This is not atypical; there were piles of waste products at Danbury and Puckeridge, but other kiln sites—including Shouldham, Norfolk (Smallwood 1978), North Grange Meaux, Beverley, Yorkshire (Eames 1961), and Borelli Yard, Farnham Park and Guildford Castle, Surrey (Riall 2003)—were relatively clear of wasters, which would have had value as hardcore. No kiln furniture was identified, and this may also indicate that the kiln was producing plainer roof tiles, simply stacked (see Kent and Dawson 1998, 47). By way of contrast, the means of stacking and the superstructures of kilns producing glazed and decorated tiles appears to have been more complex, particularly given the need to keep them separate during firing: kiln furniture was recovered from the kilns at Borelli Yard, Farnham and Danbury, and from the 13th century floor tile kiln at North Grange Meaux, where ‘structural tiles’ included voussoirs, cog shaped pieces and firebars (Eames 1961, 154; Drury *et al.* 1975, 123, Riall 2003). Rooftile kilns did not need such high firing temperatures as those producing decorated floor tiles and may have been less carefully constructed (Cherry 2001, 192).

Further, in contrast to some excavated kilns, the Finchingfield structure did not appear to show particularly extensive evidence of repair, save potentially for some ‘daubing’, and the use and disuse sequences within the stoke pit appear relatively simple. At Puckeridge, deposits in the stoke pit were interpreted as representative of sequences of rake-out, demolition and rebuilding of the kiln, and re-flooring of the pit. There was also evidence of modification and repair to the brick and tile fabric of the kiln, including repairs to the arches,

and to the mouths of the stoke-holes (Regan *et al.* forthcoming). At Danbury, North Grange Meaux and Shenley Wood also, layers were recorded which were interpreted as successive floors or areas of paved consolidation, likely relating to multiple periods of use (Drury *et al.* 1975, 108; Eames 1961, 149; Edmondson and Thorn 1989). Repairs were also evident at North Grange Meaux, Shouldham, Radwinter and Borelli's Yard, where floors were repaired, arches renewed, clay plugs applied to some areas and firing tunnels extended and repaired (Eames 1961, 143; Smallwood 1978, 46–7; Drury 1979, 25; Riall 2003, 390–10). The lifespan of kilns appears to have varied, but it has been suggested that the working lives at Borelli Yard and Danbury were 10–25 years and 40–60 years, respectively (Riall 2003, 328; Stopford 1993, 100). Whilst a lack of repair and modification may point to a successful and efficient kiln, it may simply mean that the Finchingfield kiln had a shorter lifespan. It is also noteworthy that the more finely built and repaired kilns seem to be more closely linked to 'tile factories' where there were multiple and successive kilns, or to institutions such as castles or religious establishments. The operation at Finchingfield may therefore have been of a smaller scale.

Destination of the tiles

There are various models for the operation of the tile industry prior to the 15th century (Drury 1981; Le Patourel 1968; Stopford 1993). Tilers may have been itinerant and/or settled in a factory or production centre, often operating at a village industry level (Drury 1981, 132; Cherry 2001, 193). Kiln sites may have been permanent for institutions or as tile works, and/or intermittently or seasonally used, or they may have been one-off constructions for particular projects and commissions, perhaps built by itinerant tilers perhaps using local labour (Stopford 1993, 99; Riall 2003, 329). A reasonable suggestion is that the Finchingfield kiln may have been one of the latter. However, this does not mean that the kiln was of lesser quality. Any kiln represents an investment of resources to build it, with documentary sources

highlighting payment to masons, carters, labourers and servers (Dale and Caiger 1974, 29; Stopford 1993, 100; Cherry 2001, 192; Riall 2003, 329, Hinton 2018, 486).

The main insight we have into the establishment of the Finchingfield kiln is that it was set up to exploit the resources of the area, with good access to water and a transport route which would have allowed export of tiles and import of fuel and materials if needed. Kilns may have been established as demesne kilns for manors, sometimes for a particular job, or set up to serve a lord, town corporation, or institution, such as a monastery (Hare 1991, 97–8; Stopford 1993, 103; Cherry 2001, 194). Others may have been commercial ventures, established with or without permission on common land, perhaps ‘on the fringes of the traditional manorial world and account’ (Hare 1991, 99; Ryan 1999, 36). Pat Ryan highlights that an enclosure may also have served to lay a claim on land, and records show that common and access rights were often a source of dispute between clay workers and other members of the community, with some enclosures that contained kilns knocked down (Ryan 1999, 36).

That the site appears to have been on the fringes of the Great Winsey estate may indicate that it served this manor. The moated site, with its associated fishpond, is partly overgrown by woodland and there are no early buildings remaining within the moated enclosure, within which a house of early 17th century origins was pulled down in 1946 (EPS 2024a and b, HE 2024). Further, no intrusive fieldwork has been undertaken so the use of tile at the site cannot be explored, although the kiln may have been commissioned to provide tiles for a house and its outbuildings. Another possibility is perhaps the church, where there were phases of rebuilding in the 13th and mid and late 14th centuries, the latter campaign including north and south chapels with tiled roofs (RCHME 1916, 87–96). The absence of examples of the product of the kiln hinders comparison with standing buildings.

However, it may be that the resources of the site were more important than the destination of the tiles and it may have served another patron, perhaps some distance away; other institutional landowners, such as the Priory in Thetford or St Thomas' Hospital in London, also held lands in Finchingfield. A study of medieval accounts from Wessex concluded that whilst most building projects were within five miles of a kiln, many were five to ten miles away (Hare 1991, 97–8; Cherry 2001, 193), and for a building project at Thorney Green, Suffolk, teams of horses made a total of six 24-mile overnight round trips to kilns at Stoke in Ipswich to collect 13,000 tiles, with one buying trip involving six carts carrying 1,000 tiles each, 26 horses and 14 supporting men (Dudley 2021); in this context, the need for the well and perhaps the pattern of Enclosures 3 and 4 come into sharper focus; Enclosure 3 may have provided grazing land and paddocks to accommodate horses and animals used in transport and labour. Further, in illustration of the multipurpose nature of sites where activity was seasonal, at Puckeridge in the 1420s, a William Colt leased a 'tylhouse' with land and pasture for horse, cows and hogs (Regan *et al.* forthcoming).

Wider operation

Structure 2, adjacent to the kiln, is of interest as a possible workshop structure, as is the presence of the enclosure and other possibly associated features. The kilns at Danbury were manufacturing roof and floor tiles between 1275–85 and 1325–35, and evidence was recovered of workmen's accommodation, a workshop, drying shed and two kilns, all within a ditched enclosure. Generally, whilst ancillary buildings are frequently documented, excavated examples are relatively rare in comparison to recorded kilns. This is partly perhaps due to the more ephemeral archaeological signatures of slight structures or buildings built on ground beams, and also perhaps because investigations have tended to focus on the kilns themselves, especially in rescue or community projects working with limited resources (Smallwood 1978, Drury 1981, 132–5, Riall 2003, 328; Zeepvat 2009).

The structure at Finchingfield is rather small, with an area of only 1.6m by 2.5m spanned by the postholes. At Tyler's Green, Buckinghamshire, a structure 5.3m by 3.2m was thought to be a workshop. At Danbury, an open-sided timber building on timber sills close to the kiln and interpreted as a drying shed was 7.4m by 4.5m; this had no other internal features or wear on the floor (Drury *et al.* 1975, 136, Stopford 1993, 102). Another timber-framed building at the same site has been interpreted as a workshop and was c. 5m wide and 8m long (Drury 1981, 136). A superstructure on the six earth fast posts at Finchingfield may, of course, have been larger.

Overall, as at Danbury, the site at Finchingfield gives some insight into the layout of a production site, with the kiln and associated structures within a roadside enclosure and evidence of quarrying in the wider environment. The sense of industry in such sites is captured in Figure 16, which also shows some of the various stages of tile making (BL 2022), with covered sheds, heaps (of clay and sand) and piles of fuel (see also Riall 2003, 313, for a reconstruction of the tilery at Quarr Abbey, on the Isle of Wight). Finds of tools are relatively rare, which also appears to have been the case at Finchingfield, and the knife fragments found could have been as much for personal use as for industry (Bliss 2024). Further, ten fragments of lava querns came from the trackway, stoke pit, cess pit 3061 and ditch 3346, generally in the vicinity of the kiln, but may have been related to general background activity (Shaffrey 2024). A 15th century account from Hull, however, enables the site to be populated in the imagination with wheelbarrows, shovels, water tubs, sand tubs, stocks and troughs (Cherry 2001, 190).

Subsistence and consumption

The status of tilemaking as an industry ranged from artistry to peasant craft, but was generally of fairly low status, although not bottom of the scale. Some 14th century documents record tile workers who were taxed on grain, horses, cows and pigs in addition to

stocks of tiles (Drury 1981, 132–4; Pearson 2018, 6; Hare 1991, 99; Hinton 2018, 486), and many may have combined agricultural work and tile making; as it was a seasonal enterprise the digging of clay and the manufacture and firing of tiles fitted into the labour of the agricultural year (Hare 1991, 90). At Finchingfield, the kiln structure itself is testament to the expertise and knowledge of the builder, but can the archaeological evidence take us any closer to the people on the site?

Evidence for habitation, is less commonly recorded at kiln sites, although the 'lodge' was suggested at Danbury, with two rooms and a partition, and finer pottery recovered from nearby, but no kitchen or refuse pits (Drury 1981, 136). At Finchingfield, whilst it is not possible to say for certain which features directly correlated with tile-making, there are features present which appear broadly contemporary to the kiln and it is worth exploring them in relation to the perhaps more temporary accommodation associated with the craft.

Firing could have taken about a week, with temperatures being raised from slow-drying up to high firing (Cherry 2001, 191–2). People tending the kiln and stoking it would have had fundamental needs, and a well, 2994, and possible cess pit/latrine, 3061, may have contributed to meeting them, as would ovens and hearths. Further, in terms of the duration of activity, a 'one-off' kiln may not have been single use, and multiple firings may have been needed for a project. For context, experimental work and historical documents suggests that thousands of tiles may have been fired at a time, and although at 3.78m by 2.4m a kiln at Shenley Wood was larger than the Finchingfield example, a load of up to 5000 tile has been estimated (Edmondson and Thorn 1989, 80). The 13th century refurbishment of the manor at Thorney in Suffolk mentioned above required 13,000 tiles for the first phase, including an extension, which demonstrates that more than one kiln load may have been required for an endeavour (Dudley 2021).

Overall, the 13th–14th century finds suggest domestic activity/occupation that was not of particularly high status, and they include ceramic cooking vessels and some table wares typical of local assemblages (Anderson 2024). The environmental remains and animal bone from Finchingfield are indicative, broadly, of scattered or dumped domestic waste. The small assemblage of animal bone was scattered through features, but purely by number of fragments, the majority —100 pieces— was from the second phase of activity, and 70% of this came from ditches south of the kiln, including cattle, horse, dog and chicken (Clarke 2024, table C1). A high proportion of the pottery of this phase was recovered from these ditches, cess pit 3061 and well 2994. The plant remains from this phase of the site were similar to those from the earlier phase, with free threshing wheats —mainly bread wheat— dominating the assemblage and lower quantities of barley and rye; oats, broad bean and garden pea were also present, including from well 2994. The legumes represented dietary staples, particularly for those lower down the social scale. The charred plant assemblage from well 2994, with fewer large plant seeds and little cereal chaff, could represent a crop that had been thoroughly cleaned before coming into contact with the fire (Hunter Dowse 2024). A noted rise in the small numbers of marine molluscs in the 13th–14th century phases (Brown 2024) might suggest their increased importation to the site. Perhaps foodstuffs were bought in, although the resulting remains may not differ too much from those found at an ordinary domestic site.

CONCLUSION

The site contributes to the study of medieval industrial archaeology, and the kiln adds a probably relatively short-lived example to the corpus of twin-flued updraft kilns from the south and east of England, adding to the national dataset and to a group from Essex; this contributes to research into the history of the medieval tile industry, and may also support reconstruction work and experimental archaeology. It also contributes an example towards any future synthesis. In 1981, Paul Drury highlighted that one contribution archaeology can

make to the furthering of knowledge of medieval brick and tile production sites would be through the excavation of ‘factories rather than kilns’ (Drury 1981, 138). This project has contributed the investigation of a kiln alongside other features which might have related to its operation, including an associated structure and indicators of activity using resources in the immediate landscape, along with general finds-based and environmental evidence for subsistence.

ACKNOWLEDGEMENTS

The fieldwork was commissioned by The Hill Group and undertaken by staff from the Suffolk office of Cotswold Archaeology. We particularly thank Matt Beckett and Rhonda Braybrooke from the Hill Group. Fieldwork was undertaken by Stephen Foster, assisted by Cara Barsby, Karri Hynds, Kerree Kendall, Powell Le Feuvre and Jandre Wolmarens. The finds and environmental assemblages were studied by Emma Aitken, Sue Anderson, Alex Bliss, Ciar Boyle-Gifford, Tom Brown, Andy Clarke, Kath Hunter Dowse, Ed McSloy, Ruth Shaffrey and Jackie Sommerville. Illustrations were prepared by Ryan Wilson and the article was edited by Karen Walker and Richard Mortimer. Zoe Emery compiled the project archive. The project was managed by Richard Mortimer, Grace Jones (finds) and Anna West (environmental). The fieldwork was monitored by Theresa O’Connor of Essex Place Services, on behalf of Braintree District Council. Thanks are due to Roddy Regan and Pre-Construct Archaeology for sharing a draft of their article on Puckeridge, to Paul Drury for providing information, and to staff at Essex Records Office. We also warmly thank Tony Minter and all at Bulmer Brick and Tile for a site visit and for generously spending time discussing the kiln; the works are located on the Suffolk/Essex border and make hand-made brick and tile using traditional methods.

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Table 1

Fabric	Code	Date range	No	Wt/g	eve	MN
Prehistoric	PREH	preh	15	24		9
Unidentified handmade wares	UNHM	preh/ESax?	8	15		8
Roman coarse grog storage vessels	RBCG	1st-4th c.	3	73	0.08	3
Roman greyware	RBGW	1st-4th c.	6	17		5
Roman shelly wares	RBSH	1st-4th c.	1	2		1
Shelly wares without sand	12A	11th-M.12th c.?	5	13		2
Slightly sandy shelly wares	12B	11th-M.13th c.?	4	29		3
Sandy shelly wares (sand predominant)	12C	11th-M.13th c.?	11	69		8
Early medieval sandy wares (general)	13	11th-13th c.	359	2981	0.72	280
Transitional sandy ware	13T	12th-M.13th c.?	76	697	0.45	50
Heddingham coarseware	20D	M.12th-14th c.	51	409	0.47	38
Heddingham ware	22	M.12th-14th c.	63	666	0.11	36
Medieval sandy greywares (general)	20	M./L.12th-14th c.	159	14213	13.0	118
Medieval white wares	23	12th-14th c.	1	3		1
Unident medieval ?English wares	98M	12th-15th c.	2	4		2
Rouen-type ware	28	L.12th-M.14th c.	1	3		1
Medieval sandy orange wares	21	13th-15th c.	64	725	0.73	30
Colchester-type ware	21A	13th-15th c.	7	56		7
Mill Green ware	35	L.13th-M.14th c.	38	690	0.50	3
Late Grimston-type ware	38L	14th-15th c.	2	40		1
Black glazed ware	40B	16th-18th c.	1	2	0.15	1
<i>Totals</i>			230	20730	16.2	167

Table 2

Type	Form	Code	No	Wt (g)
Roman	Roman tile	RBT	2	119
		RBT?	4	178
	Flanged <i>tegula</i> ?	FLT?	1	51
	<i>Imbrex</i> ?	IMB?	1	146
Walling	Post-medieval brick	LB	5	3555
		LB?	13	10
	Modern brick	B	1	3
Roofing	Plain roof tile: medieval/late medieval	RTM	37	2960
		RTM?	18	2050
	Plain roof tile: late/post-medieval	RTP	67	2654
		RTP?	5	1816
	Plain roof tile: uncertain date	RT	34	1055
		RT?	1	6
	Ridge tile	RID	5	2891
		RID?	1	28
	Hip tile	HIP	5	1602
		RID/HIP	4	66
Unknown	Unidentified	UN	8	75
<i>Totals</i>			212	19265

Table 3

Fabric group	Main attributes	Code	RT M	RTP ?	RT P	RT	RID	HIP	RID/HIP
Silty	flint	sf			1				
	flint, ferrous oxide	sffe	1						
Fine sandy	-	fs			3				
	chalk, ferrous oxide	fscfe	13						
	clay pellets	fscp	2		1	6	1		
	coarse rounded quartz	fscq			2				
	flint	fsf			2				
	ferrous oxide	fsfe			4				
	flint, ferrous oxide	fsffe			23				
	mica	fsm			1				
	mica, chalk, clay pellets	fsmc cp					2		
	mica, clay pellets	fsmc p		5	6		2	5	4
Medium sandy	-	ms			1				
	chalk, clay pellets	mscc p	4						
	chalk, ferrous oxide	mscf e	21						
	clay pellets	mscp				1			
	coarse rounded quartz	mscq	1		1				
	flint	msf			4				
	flint, ferrous oxide	msffe	4	1	18	28			
White-firing	medium sand, chalk	wms c	9						